

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/019151

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ F16K7/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl⁷ F16K7/06, A61M5/168, F15B15/06, F16K23/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005
Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	JP 7-51368 A (Nissho Corp.), 28 February, 1995 (28.02.95), Par. Nos. [0004] to [0007], [0017] to [0022]; Figs. 1 to 4 (Family: none)	1-3 4-6, 8-10 7, 11, 12
Y A	JP 2002-161901 A (Kabushiki Kaisha Tomoe Gijutsu Kenkyusho), 07 June, 2002 (07.06.02), Par. No. [0001]; Fig. 1 (Family: none)	4-6 7, 8, 11, 12
Y	JP 2002-306549 A (Mizuho Ika Kogyo Kabushiki Kaisha), 22 October, 2002 (22.10.02), Full text; Fig. 4 (Family: none)	8

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search
11 March, 2005 (11.03.05)

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05 April, 2005 (05.04.05)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

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PCT/JP2004/019151

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 10-281318 A (SMC Corp.), 23 October, 1998 (23.10.98), Full text; Fig. 1 & US 6000629 A & GB 2324133 A & DE 19811191 A	9,10
X	JP 8-266623 A (JMS Co., Ltd.),	1-3
Y	15 October, 1996 (15.10.96),	4-6,8-10
A	Full text; Figs. 2 to 3 (Family: none)	7,11,12
A	JP 9-250644 A (Ryu KAWANABE, Toko-Barekkusu Kabushiki Kaisha), 22 September, 1997 (22.09.97), Full text; Figs. 1 to 6 (Family: none)	1-12
A	JP 2003-254459 A (SMC Corp.), 10 September, 2003 (10.09.03), Full text; Fig. 1 & US 2003/178504 A1 & DE 10309112 A	1-12
A	JP 2003-278927 A (CKD Kabushiki Kaisha), 02 October, 2003 (02.10.03), Full text; Figs. 1 to 2 (Family: none)	1-12